



09/819,969

IN THE CLAIMS:

Please amend claim 1 to read as follows:

Sub B27

Q1

1. (Amended) A self-sustained pulsating laser diode having

a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type each being arranged on a semiconductor substrate of the first conductivity type, the number of said quantum wells being at least 5 and no greater than 10; and a layer thickness of a flat part of said second cladding layer having a current blocking structure being at least 300nm and no greater than 500nm; and a carrier density in said flat part of said second cladding layer having a current blocking structure being at least  $1 \times 10^{17} \text{ cm}^{-3}$  and no greater than  $5 \times 10^{17} \text{ cm}^{-3}$ .

Please amend claim 2 to read as follows:

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2. (Amended) A self-sustained pulsating laser diode having

a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type each being arranged on

a semiconductor substrate of the first conductivity type,

an effective refractive index difference parallel to the layers ( $\Delta n$ ) being at least  $7 \times 10^{-4}$  and no greater than  $3 \times 10^{-3}$ , and a carrier density in

a flat part of said second cladding layer having a current blocking structure

being at least  $1 \times 10^{17} \text{ cm}^{-3}$  and no greater than  $5 \times 10^{17} \text{ cm}^{-3}$ .

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sub c1 } [Please amend claim 3 to read as follows:]

3. (Amended)

A self-sustained pulsating laser diode

according to claim 1, wherein said cladding layers are made of a semiconductor that includes AlGaInP, and said active layer is semiconductor that includes at least one of GaInP and AlGaInP.

a' cmt. [Please amend claim 4 to read as follows:]

4. (Amended) A self-sustained pulsating laser diode according to

claim 2, wherein said cladding layers are made of a semiconductor that includes AlGaInP, and said active layer is a semiconductor that includes at least one of GaInP and AlGaInP.

[Please amend claim 9 to read as follows:]

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9. (Amended)

A self-sustained pulsating laser diode having

a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type each being arranged on a semiconductor substrate of the first conductivity type, the number of said quantum wells being at least 5; and

a layer thickness of a flat part of said second cladding layer having a current blocking structure being at least 300nm; and an effective refractive index difference parallel to the layers ( $\Delta n$ ) being at least  $7 \times 10^{-4}$  and no greater than  $3 \times 10^{-3}$ .